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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,057	01/12/2004	John M. Brookfield	D/A3312	1720

7590 05/31/2006

Patent Documentation Center
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Rochester, NY 14644

EXAMINER

FIDLER, SHELBY LEE

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,057

Applicant(s)

BROOKFIELD ET AL.

Examiner

Shelby Fidler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 2-4 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claim 3 is withdrawn in view of the newly discovered reference(s) to Okuda et al. (US 6578954 B2). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 6488355 B2) in view of Okuda et al. (US 6578954 B2) and Tachihara et al. (US 6280020 B1)

Nakamura et al. ('355) teach the following:

***regarding claim 1**, a drop emitting device comprising:

an array of finger manifolds (elements 5, Fig. 2), each finger manifold having longitudinally separated first and second ends (unreferenced ends of elements 5, Fig. 2), wherein the first end comprises a fluid receiving end (col. 7, lines 39-40);

a plurality of drop generators (elements 2 represent drop generators, Fig. 2), each fluidically coupled to one of the finger manifolds (col. 6, lines 64-67)

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***regarding claim 7**, the finger manifolds and drop generators are formed in a laminar stack of metal plates (col. 8, lines 32-55)

Nakamura et al. ('355) do not expressly teach the following:

***regarding claim 1**, a respective vent structure fluidically coupled to each of the finger manifolds for damping pressure perturbations in such finger manifold, wherein the vent structure is disposed at the second end of the manifold; and

the vent structure comprises a plurality of apertures

***regarding claim 5**, each aperture has a diameter of at most about 60 microns

***regarding claim 6**, the finger manifolds receive melted solid ink

***regarding claim 7**, the vent structures are formed in a laminar stack of plates

Okuda et al. ('954) teach the following:

***regarding claim 1**, a respective vent structure (air vent hole 40, Fig. 16) fluidically coupled to a manifolds for damping pressure perturbations in such manifold (col. 14, lines 50-55), wherein the vent structure is disposed at the second end of the manifold (Fig. 16)

***regarding claim 7**, the vent structures are formed in a laminar stack of plates (col. 11, lines 43-48)

Tachihara et al. ('020) teach the following:

***regarding claim 1**, the vent structure comprises a plurality of apertures (col. 7, lines 40-44)

***regarding claim 5**, each aperture has a diameter of at most about 60 microns (col. 6, lines 22-23; the inscribed diameter of the aperture has a maximum diameter of 54 μ m)

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***regarding claim 6**, the finger manifolds receive melted solid ink (col. 14, lines 16-24)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize a vent structure at the second end of the finger manifolds (Okuda et al.) and to utilize a vent structure that comprises a plurality of apertures (Tachihara et al.), as taught by Okuda et al. ('954) and Tachihara et al. ('020), respectively, in Nakamura et al.'s finger manifolds for the purposes of easily removing bubbles from the ink channels (Okuda et al. - col. 14, lines 50-55) and to shorten the refill time (Tachihara et al. - col. 7, line 65- col. 8, line 3).

Response to Amendment

This action is responsive to the amendment filed on 4/10/2006.

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Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelby Fidler whose telephone number is (571) 272-8455.

The examiner can normally be reached on MWF 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SLF 4/17/06

SLF

K. FEGGINS
PRIMARY EXAMINER
5/06